All India Co-ordinated Research Project on NICRA

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Annual Progress Report
(1.4.2012 to31.3.2013)

Department of Agricultural Meteorology
College of Horticulture
Kerala Agriculture University
Vellanikkara, Thrissur-680 656

CONTENTS

All India Co- ordinated Research Project- NICRA

1. Title of the project   : All India Co-ordinated Research Project on NICRA .

2. Location of the co- ordinating   : Agricultural Meteorology,

        College of Horticulture, Vellanikkara

        Thrissur 680 656, Kerala

3. Geographical Co-
     Ordinates of the
     Location

        : Latitude - 10°31'N

        Longitude - 76°13'N

        Altitude - 25 m amsl

4. Sanction Number

        :. No.EP-A1-9390/11 dt.23-03-2011 of ICAR

        No. R3/61121/2011 dt.17-03-2013 of KAU

5. Date of start   : 2010-2011

6. Report period   : 2012-2013

7. Objectives

❖ To identify micro level details of crop and crop growing environments of the selected NICRA- villages.
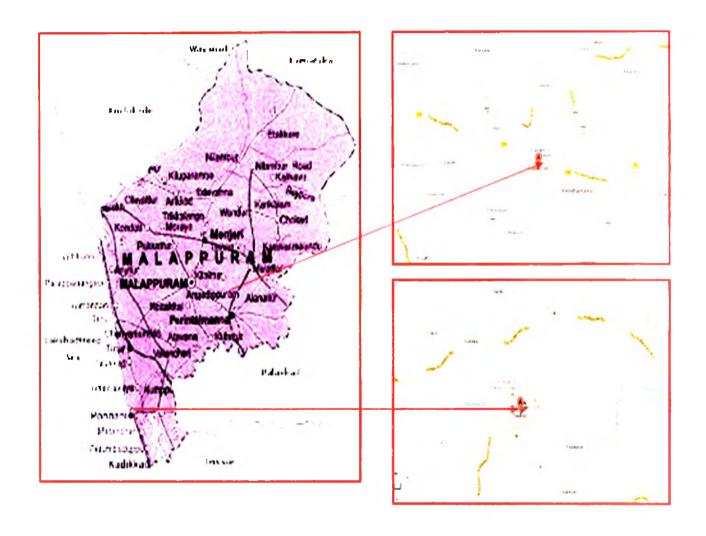
❖ To develop crop weather relationships of major crops of the selected NICRA- villages

❖ To disseminate Agro met Advisory bulletin to the selected NICRA- village.

8. Outline of Technical programme

This study aims to identify micro level details of crop and crop growing environments of the selected NICRA- villages at Malappuram district. Collection of long term district level crop and weather data for the Malappuram district. To disseminate Agromet Advisory bulletins to the farmers. Benchmark survey will be conduct at Malappuram district.

STUDY AREA

9. Results obtained during the period:

The work is concentrated at KVK Malappuram. Bench Mark Survey started at Thavanur from 10.01.2013 onwards. A Benchmark survey will be conducted in selected two villages (Thavanur, Angadippuram) of Malappuram district. From each village 60 farmers will be selected and interviewed. Rice based and vegetable based farmers were selected in both the villagers. Based on the survey proforma, village profile details and individual farmer profile were collected. Collection of farmer's knowledge on climate change and its impact on agriculture is going on. Weather data for the period from 2003 to 2009 were collected from KCAET College, KAU. Two farmers awareness programme were conducted in Thrissur district on 21/03/2013 and 22/03/2013 at Mannuthy and Karalam respectively.

10. Dissemination of AA Bulletins

Hard copies of Bulletins are disseminated to the selected farmers of Thavanur and Angadippuram villages in Malappuram District.

FARMERS AWARENESS PROGRAMME

SI NO	Date	Venue	No.of participants	Class/ seminar
1.	21/03/2013	Mannuthy	60	1. Control of varios diseases in vegetables taken by Dr. Saina Mol Kurian 2. "Climate change" taken by Smt. P. Lincy Davis.
2.	22/03/2013	Karalam	60	1. "Climate change" taken by Smt. P. Lincy Davis. 2.Control of varios diseases in vegetables taken by Dr. Saina Mol Kurian

FARMERS AWEARENESS PROGRAMME

BENCH MARK SURVEY

Appendix I: BENCHMARK SURVEY PERFORMA

BENCHMARK SURVEY PROFORMA FOR AICRPAM-NICRA PROJECT

I. Village Profile

		Thavanur
1.	Name of C.D. Block	: *Thavanur*
2.	Name of the District	: *Malappuram*
3.	Name of the Village	: *Thavanur*
4.	Farming households in the village (No.)	:
5.	Total population in the village (No.) *3708*	: Male [ ] *18898* Female [ ] *18875*
	a. SC population in the village (No.) *5343*	Male [ ] *2676* Female [ ] *2667*
	b. ST population in the village (No.)	Male [ ] Female [ ]
6.	Farmers in the village (No.) *1000*	: Marginal [ ] *300* Small [ ] *700*
7.	Landless labourers in the village (No.)	: *200*
8.	Gross cropped area in the village (ha)	: *520 ha*
9.	Sources of irrigation and percentage of area irrigated	:
	Source of irrigation	: *well, pumpset*
	Area (ha)	:
10.	No. of households engaged in crop production	:

16.	Occurrence of flood during last 10 years (No. of years)	: *No*
17.	No. of farm knowledge centres, if any, in the village / near village	: *L KVR, Malappuram*
	Distance of farm knowledge centre	:
	Nature of farm knowledge provided	:
	Agencies involved in providing farm knowledge	:
18.	No. of Self Help Groups (SHG) operating in the village	:
	a. No. of women SHG operating in / near the village	: *124*
	b. Nature of agricultural activities covered by the SHG in the village	:
19.	Whether Kisan Club is present? If yes, its name	: *N/a*
20.	Frequency of Village Level Worker visits (VAW/VLW)	:
21.	No. of farmers recognized the VAW/VLW in the village	:
22.	Mass media outreach in the village	:
	a. No. daily news papers subscribed	: *All*
	b. No. of Radios	:
	c. No. of TVs	:
	d. No. of printed bulletins/magazines reaching in a month	:

23. Weather Forecast Outreach   : *Monthly*

S.No.	Particulars	TV	Radio	Print Media	Personal visit	Others
1.	No. of forecasts in a week					
2.	Name of Channel/Station/Newspaper, etc. in order of priority					
	a.					
	b.					
	c.					
3.	% Farmers outreach					

11. Season-wise Existing cropping pattern in the village with variety (HYV / Local), area coverage (ha) and yield (q/ha) under the crops

Crop	Kharif			Rabi			Summer		
	Variety	Area (ha)	Yield (q)	Variety	Area (ha)	Yield (q)	Variety	Area (ha)	Yield (q)
Paddy									
Dry seeded									
Wet seeded									
Transplanted									

12.	No. of farm implements available in the village	:
	Tractors	:
	Power tillers	: *6 - 8 Nos*
	Pump set	:
	Sprayer	:
	Mould plough	:
	Wooden plough	:
	Threshers	:
13.	No. of farm units engaged in	:
	Dairy	:
	Poultry (No. of birds per unit)	:
	Goat farming	: *2*
	Piggery	:
	Bee keeping (Honey bee units - No. of Boxes/unit - average)	:
	Mushrooms	:
	Fishery	:
	Others, if any (specify)	:
14.	Occurrence of drought during last 10 years (No. of years)	:
15.	Extent of damage due to drought	: *No*
	Percent area of the village affected	: *No*
	Percent loss occurred	:

Agro Advisory Outreach   : *No*

S.No.	Particulars	TV	Radio	Print Media	Personal visit	Others
1.	No. of Agro Advisory in a week					
2.	Name of Channel/Station/Newspaper, etc. in order of priority					
	a.					
	b.					
	c.					
3.	% Farmers outreach					

25. Agromet (weather-based) advisory outreach   : *Monthly*

S.No.	Particulars	TV	Radio	Print Media	Personal visit	Others
1.	No. of forecasts in a week					
2.	Name of Channel/Station/Newspaper, etc. in order of priority					✓
	a.					
	b.					
	c.					
3.	% Farmers outreach					

II. Individual Farmer Profile

1. Farmer's ID No. : Thavanus
2. Farmer's Name : 5
3. Family Size : Muneer C·D
4. Village : Small
5. Block : Thavanus
6. District : Ponnani
7. State : Malappuram
8. Farmer's age : Kerala
9. Education of the farmer : 36
   : SSLC

A. Demographic Information (Including family and non-family members living permanently in the household and and taking food from the same kitchen during the selected reference period)

S. No.	Name of the family member	Relation to Head	Sex	Age (Years)	Civil Status	Education Level	Years in school	Occupation Primary	Secondary
1	Haytha	father	Male	85					
2	Tumailath	wife	female	26		BLc			
3	Lubina	daughter	female	10		5th class			
4	Mohammad Shibil	Son	male	6		1st class			

...ils of Existing Agricultural Land Holding (During the selected reference period).

Parcel	Plot	Area (ha)	Topography	Soil type	Soil Tested Yes/No	Rain fed/ Irrigated	Source of Irrigation	Tenurial status
	coconut Mecomut	0% ha		-	Yes			
	Nafary							
	Rice	1½ ha						

C. Existing Machinery, Containers, Tools and Implement Inventory: Yes

Name	Number	Ownership	Purchase Year	Age (Years)	Remaining Life	Present Value (Rs.)
Tractor	1	Muneer	2011 Model			6,60,000/-

Tractor, Power Tiller, Power sprayer, Weaving loom, Fishing nets, traps, Shelter, Animal cart, Bicycle, Weeder, Hoe, Shovel, Rake

D. Existing Land Use Pattern (record crops grown during the selected reference period):

Season	Parcel	Plot	Crop Name	Variety Name	HYV/ CV	Cropped Area (ha)	Cultivation Method	Production Main Product	Value (Rs.)	By Product	Value Rs.	Total Value (Rs.)

Method of Seeding: 1=Dry seeding, 2=Wet seeding, 3=Transplanting

E. Cost of Production and Return in Rice and Other Crops (During the Selected Reference period) (Select the largest parcel / Plot grown to a variety during the main rice/ crop-growing season)

Crop	_____	Season	_____
Parcel name	_____	Area (ha)	_____
Variety Name (CV/HYV)	_____	Main Product (q)	_____
By Product (q)	_____	Cost of Production (Rs/ha)	_____
Gross Return (Rs/ha)	_____	Net Return (Rs/ha)	_____

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Crop Output and Disposal (Including production and disposal of crops grown during the selected ...rop year)

Crop Name	Year	Total production (q)	Quantity sold (q)
	Normal		
	Drought		
	Flood		

III. Perception/knowledge of farmers about climate change and its impact on agriculture/farmers assessment of weather parameters

1. Perception of farmers on changes in the Precipitation:

S.No.	Statements	Before 10 Years	Since last 10 Years	Very recent (since last 5 Years)
1.	Number of rainy days (> 2.5 mm)			
	a. More			
	b. Less	✓	✓	✓
2.	Amount of rainfall			
	a. High			
	b. Medium	✓		
	c. Low			
3.	Onset of rainfall			✓
	a. On time			
	b. Irregular	✓		
4.	Dry spells			✓
	a. Long			
	b. Medium			✓
	c. Short	✓	✓	
5.	Changes in the rainfall during crop growing period (July-October) (Yes / No)	No		No
6.	Change in the rainfall pattern			
	1. High variation			
	2. Less variation			✓
	3. No variation at all	✓	✓	
7.	Deficit rainfall			
	a. High			
	b. Moderate			
	c. Slight			
8.	Crop growing period			
	a. Extended			
	b. Reduced			
	c. No change		✓	✓

S.No.	Statements		Before 10 Years	Since last 10 Years	Very recent (since last 5 Years)
1.	Change in temperature				
	a.	Increased			
	b.	Decreased		✓	✓
	c.	No change	✓		
2.	i.	Extreme temperature			
	a.	Very frequently			
	b.	Less frequently			
	c.	Not experienced at all			
	ii.	Extremes of low temperature			
	a.	Very frequently			
	b.	Less frequently			
	c.	Not experienced at all			
3.		Experienced scorching sunshine			
	a.	High			
	b.	Moderate			✓
	c.	Low	✓	✓	
	d.	Not at all experienced			
4.	i.	Variation in summer temperature			
	a.	High			
	b.	Moderate	✓	✓	✓
	c.	Low			
	d.	Not at all experienced			
	ii.	Variation in winter summer			
	e.	High			
	f.	Moderate			
	g.	Low			
	h.	Not at all experienced			

No.	Statements		Before 10 Years	Since last 10 Years	Very recent (since last 5 Years)
1.	Soil nutrient status due to climate change				
	a.	Increase			
	b.	Decrease			
	c.	No change			
2.	Any changes in cultural operations				
	i.	Sowing			
	a.	Early			
	b.	Late			
	c.	No change			
	ii.	Transplanting			
	a.	Early			
	b.	Late			
	c.	No change			
	iii.	Any other			
3.	i.	Changes in weed infestation			
	a.	Increase			
	b.	Decrease			
	c.	No change			
	ii.	Emergence of new weed species due to climate change (Yes / No / If any)			
4.	i.	Disease incidence			
	a.	High			
	b.	Medium			✓
	c.	Low			
	ii.	Occurrence of new diseases			
	a.	Yes			
	b.	No			✓
	c.	If any			
5.		Crop losses due to any adverse effects (heavy rainfall, hailstones, cyclones, wind velocity, etc.) (Yes / No)			
6.		Post-harvest losses due to climate change (Yes / No)			
7.	Changes in yield				
	a.	Increase			
	b.	Decrease	✓	✓	✓
	c.	No change			
8.	i.	Changes in cost of cultivation			
	a.	Increase			
	b.	Decrease			✓
	c.	No change			
	ii.	If it is increased, income per annum/season (Rs.)			
	iii.	Impact of farm income			
	a.	Increase			
	b.	Decrease			
	c.	No change			

No.	Crop	Most affected stage		Second most affected stage	
		Stage	Weather parameter	Stage	Weather parameter

4. Adaptation strategies/measures taken up by farmers:

A. Crop adaptation strategies:

S.No.	Statement	Adaptation measures		
		Initiated		Not Initiated
		Increased cost	Expected cost	
1.	Varieties			
	a. Changed from long duration to short duration varieties			
	b. Changed from short duration to long duration varieties			
2.	Changed from ___ to other crops			
3.	Changed in planting dates			

		Increased		Decreased		No change
		Increased cost	Expected returns	Increased cost	Expected returns	
4.	Spacing between the row/plants					
5.	Quantity of seeds used					
6.	Quantity of fertilizer application					
7.	Number of irrigations given					
8.	Quantity of FYM applied					

S.No.	Statement	Adaptation measures		
		Initiated		Not Initiated
		Increased cost	Expected cost	
1.	Farm pond			
2.	Contour bunds			
3.	Graded bunds			
4.	Ridges and furrows			
5.	Mulching			
6.	Drip irrigation			
7.	Additional Bore wells			
8.	Deepening of wells			

C. Adaptation strategy by means of crop insurance No

S.No.	Statement	Adaptation measures		
		Initiated		Not Initiated
		Increased cost	Expected cost	
1.	Crop Insurance			
	a. When started?			
	b. For which crop?			
	c. Benefits			

...armers' expectations to mitigate the ill effects of climate change

S. No.	Farmers suggestions	Response			
		Most Important	Important	Less Important	Ignored
1.	Early warning has to be given to the farmers about environmental changes	✓			
2.	Creating awareness to the farmers about appropriate adaptation measures against climate change	✓			
3.	Development department should ensure supplying of production inputs at appropriate time in the villages		✓		
4.	Subsidies/compensation has to be given for the crops to make up the cost of cultivation due to weather aberrations				
5.	Insurance has to be extended to all crops				
6.	Providing financial support for soil nutrient enrichment		✓		
7.	Incentives/support for increasing the green manuring	✓			
8.	Support price has to be given to all the crop produce based on cost of cultivation		✓		
9.	Creating awareness/Support for adoption of organic farming technologies			✓	
10.	Green coverage has to be increased	✓			
11.	Requirement of Agromet Advisory			✓	
	a. Past weather data (days) (3/5/10/>10 days)		✓		
	b. Weather forecast (days ahead) (3/5/10/>10 days)		✓		
	c. Applications events (eg. Fertilizers, pesticides, weeding Intercultivation operations, etc.)		✓		

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IV. Individual Perception on Agromet Advisory

1. Are you aware of weather forecast? (Yes/No)   : No

2. Are you aware of Agromet Advisory? (Yes/No)   : No
   If yes, what is the source (Mention 3 Important)   :
   a. Farm friends/group discussion at Choupal   :
   b. Market middleman from where you purchase and sale your farm inputs / outputs
   c. Radio/Electronic media/ Newspaper/ Bulletins/other mass communication media
   d. SMS
   e. SHGs/NGOs/other organizations voluntary
   f. Kisan Mela/Kisan Mahotsava, etc
   g. Field demonstration
   h. Others, specify   :

3. How often you receive agromet information?   :
   a. Daily   :
   b. Bi-weekly   :
   c. Weekly   : ✓
   d. Fortnightly   :
   e. Monthly   :
   f. Seasonally   :

4. What are the parameters of forecast used by you?
   a. Rainfall   : Rainfall
   b. Temperature   :
   c. Wind speed   :
   d. Wind direction   :
   e. Cloud cover   :
   f. Any other   :

5. Are you aware of AAS Bulletins? (Yes/No)   : No

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6. How often you receive the information in time?

Percent timeliness	Weather forecast	Agromet Advisory
0 - 25		
25 - 50		
50 - 75		
75 - 100		

7. How much you believe that the information is correct?

Percent correct	Weather forecast	Agromet Advisory
0 - 25		
25 - 50		
50 - 75	✓	
75 - 100		✓

8. How much information matches the actual conditions

Percent matching the need	Weather forecast realized	Agromet Advisory meeting the local needs
0 - 25		
25 - 50		
50 - 75		
75 - 100	✓	✓

9. Whether the inputs recommended in the advisory are available locally?

Percent Time available	Weather forecast	Agromet Advisory
0 - 25		
25 - 50		
50 - 75	✓	
75 - 100		✓

10. Whether the content of information is simple to understand?

Percent simplicity	Weather forecast	Agromet Advisory
0 - 25		
25 - 50		
50 - 75		
75 - 100	✓	✓

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15. Whether the Advisory you get includes the following management practices?

Item	Yes	No	Whether you need advisory
Sowing			
Weed management			
Fertilizer management	✓		
Insect pest and diseases			
Cultural practices			
Harvesting			
Processing			
Storage	✓		
Transportation			

16. Whether the Advisory you get includes the following management practices?
   a. < 25%   :
   b. 25-50%   :
   c. 50-75%   :
   d. 75-100%   :

17. Whether contingency plan and measures reach to you? (Yes/No)

18 Please give some instances of profit and loss accrued to you by adopting the advisory

S.No.	Advisory	Date/Month/Year of Advisory	What went wrong in the Advisory?	Profit (Rs.)	Loss (Rs.)

19 Whether feedback on Advisory collected? (Yes/No)   :
   1. If yes, who does collect the feedback?   :
   2. How often is it collected?   :

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What is your suggestion to strengthen the Advisory?

S.No.	Item	Suggestion
1.	Mode of dissemination	
2.	Time of dissemination in a day	
3.	Lead time	
4.	Frequency of Advisory	
5.	Content of Advisory	
6.	Language of Advisory	
7.	Commodity of Advisory	
8.	Management practices	

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Appendix II : LIST OF FARMERS AT THAVANUR

BALAKRISHNAN K.K
    KRISHNAN KORATTIYIL
    THAVANUR
    PIN 679573

VMC NAMBOODHIRI
    VELLAYILMANA
    THAVANUR
    PIN 679573

M.K VELAYUDHAN
    NELLIKULANGARA HOUSE
    THAVANUR P.O
    PIN 679573

N.P KORMAN
    THAVANUR

C.P MUNEER
    CHITTAKATUPALIYIL
    AYANKALAM P.O
    PIN 679573

RAMESH KUMAR I.S
    IRUPPAYIL HOUSE
    THAVANUR
    PIN 679573

ACHYUTHAN MASTER
    KOTHANKULANGARA
    ATHALLUR
    PIN 679573

BASHEER E.P
    ENAMPARAMBIL HOUSE
    ATHALLUR
    PIN 679573

MUHAMATHKUTTY
    MALIYURVALAPPIL
    ATHALLUR
    PIN 679573

ABDUL RAHMAN
    NADUVILKARUMANKUZHIYIL
    ATHALLUR
    PIN 679573

MUHAMMATHKUTTY
    NADUVILKARUMANKUZHIYIL
    ATHALLUR
    PIN 679573

MOYTHU
    NADUVILKARUMANKUZHIYIL
    ATHALLUR
    PIN 679573

SAHARBAN K.K
    PUTHUPARAMBIL HOUSE
    THAVANUR
    PIN 679573

SHAJI
    MURUDAVIL HOUSE
    THAVANUR
    PIN 679573

PATHMINI
    VAKAYIL HOUSE
    KADAKASSERY
    PIN 679573

JAMEELA
    MANNAMTHALA
    NARIPARAMBU

MAMMU
    MOZHOTTIL HOUSE
    KADAKASSERY
    PIN 679573

HARIDASAN
    ETTANGALLIL
    VELLANCHERY

RAMACHANDRAN
KOTHANKULANGARA
ATHALLUR
PIN 679573

MUHAMATH
ENAMPARAMBIL
ATHALLUR
PIN 679573

ABDULLAKKUTTY
ENAMPARMBIL
ATHALLUR
PIN 679573

GOPALAN
CHAKKATH VEEDU
THAVANUR
PIN 679573

RAMACHANDRAN
KANNAMPARAMBIL HOUSE
THAVANUR
PIN 679573

ABDUL KAREEM
PATHUPARAMBIL HOUSE
THAVANUR
PIN 679573

BALAKRISHAN
CHANNAYIL HOUSE
THAVANUR
PIN 679573

HASNAS
KANNAMCHATHUVALAPPIL
HOUSE
THAVANUR
PIN 679573

GANGADHARAN
CHANNAYIL HOUSE
THAVANUR
PIN 679573

GOPI
CHANNAYIL HOUSE
THAVANUR
PIN 679573

CHANGAN K
KUTTIKKATTIL HOUSE
VELLANCHERY

MANIKANDAN
KUTTIKATTIL HOUSE
VELLANCHERY

SUBHRAMANYAM
PARAPPURATH HOUSE
VELLANCHERY

SURESH
THIRUVATHRA
VELLANCHERY

SUDHAKARAN
NERTHETHIL HOUSE
VELLANCHERY

THANKA
KANNAKATHARAYIL HOUSE
VELLANCHERY

BALAKRISHANA
NERTHETHIL HOUSE
VELLANCHERY

HARIDASAN NAIR
PADAKKAL HOUSE
VELLANCHERY

VASUDEVAN
NERTHETHIL HOUSE
VELLANCHERY

KUNJUNNI K.A
KARATTUILLATHAVALAPPIL
VELLANCHERY

VILASINI K.P KANNAMPARAMBIL THAVANUR679573 EBRAHIM ULLATTUVALAPPIL THAVANUR PIN 679573 ACHYUTHAN PLAKKAT HOUSE THAVANUR PIN 679573 SANKARAN PANDARAVALAPPIL HOUSE MARAVANCHERI KADANCHERI RASEENA NADAKAVIL HOUSE TRIKANNAPURAM PIN 679573 MUHAMMATHKUTTY THOZHUKATTUVALAPPIL HOUSE THAVANUR PIN 679573 BHAVAHAJI VADAKKATTUVALAPPIL MARAVANCHERI YUSAF HAJI VALIYAPEEDIKAYIL HOUSE KADAKKASSERY PIN 679573 HAMSA ARIPARAMBIL HOUSE THAVANUR PIN 679573 HAMSA VELLACHALIL HOUSE THAVANUR PIN 679573 BHASKARAN CHANNAYIL HOUSE THAVANUR	ABOOBAKAR THAZHETHIL HOUSE VELLANCHERY ASHARAF CHAKALIPARAMBIL AYANKALAM P.O PIN 679573 BINEESH ANJUKALLIPARAMBIL HOUSE VALLANCHERY MOYTHUKUTTY VALIYAPEEDIKAYIL HOUSE KADAKASSERY PIN 679573 THULASEEDHARAN VALOLAVALAPPIL HOUSE THAVANUR PIN 679573 SEYTH ALI KADAKASSERY PIN 679573 DHANYA VALIYOLAPARAMBIL HOUSE KADAKASSERY PIN 679573 KOCHUBAVA VALIYAPEEDIKAYIL HOUSE KADAKASSERY PIN 679573 MARAYKAR HAJI VALIYAPEEDIKAYIL HOUSE KADAKASSERYPIN 679573 POKKAR KOTHUVANPARAMBIL HOUDE MADHIRASSERY KHADAR MOOCHIKOOTATHIL HOUSE ATAHALLUR

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